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# **"CATALASAN NUCLEAR FUSION REACTOR"**

## **A Rotating Centrifugal-Laser Nuclear fusion reactor**

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#### **I. Field of Invention**

The field of invention encompasses Mechanics, Thermodynamics, Solid State Physics, and Particle and Laser Physics. However, the actual comprehension of the design can also be understood in a simple way using appropriate drawings.

#### **II. Summary of Invention**

The basic idea of my invention is to use a large high-speed centrifugal rotating disk with many lasers attached at the ends of the disk in order to confine two positively charged Hydrogen atoms, where the force of the laser and the force of the centrifuge are in opposite equilibrium. And, to guide the two protons into a cross section, we use a circular electromagnetic field confinement, so that the two high temperature proton particles heated by the laser does not melt the disk. The material of the disk requires that it act as a good heat sink and strong enough to overcome high speed stress and strain when rotating.

#### **III. System Drawings**

Please see next pages.

#### IV. Brief Description of Drawings

The Catalasan Fusion Reactor consists of a Disk, **Fig. 1**, a high-speed rotating centrifugal-laser nuclear fusion reactor. Moreover, it uses a traditional fluid, **Fig. 4 & Fig. 8**, that is heated by the Disk, **Fig. 1**, to create a steam, **Fig. 3**, that powers fan blades, **Fig. 2**, in order to spin the Disk, with inputs of  $2H^+$  and outputs of  $He^{2+}$ . The two Gear Boxes, A and B, **Fig. 9 & Fig. 10**, enhance the spin of the Disk for higher and variable speeds of rotation.

To begin to start the entire fusion reactor, there must be a Starter, **Fig. 5**, an electro-mechanical motor that spins the Disk using a rechargeable Battery, **Fig. 6**. Once, the system is running, the Starter becomes a Charger, **Fig. 5**, with Gear Box B, **Fig. 9**, in order to charge the Battery, **Fig. 6**, connected to a power line, **Fig. 7**, for electrical consumption.

The Disk, **Fig. 1**, is a high-speed centrifugal-laser fusion reactor explained on the next page as a Cross Section Diagram of the Disk, **Fig. 1**. It consists of a series of Lasers, **Fig. 13**, attached at the ends of the Disk. The input of protons by a pump, **Fig. 10**, causes an input of  $H^+$  &  $H^+$  by a Switch, **Fig. 11**, from **Fig. 12**, into the Laser-Centrifuge. Once the  $H^+$  &  $H^+$  form  $He^{2+}$ , the  $He^{2+}$  has a positive charge,  $He^{2+}$  falls out, **Fig. 14**. The Bottom View is specified in **Fig. 16**, with Lasers, **Fig. 15**.

#### V. Description of the Preferred Embodiments

The Overall System Model, or the Catalasan Centrifugal-Laser Nuclear Fusion Reactor, Page 3, consist of the Rotating Disk, **Fig. 1**, Fan Blades, **Fig. 2**, Steam, **Fig. 3**, Fluid, **Fig. 4 & Fig. 8**, Gear Box A & B, **Fig. 9**, Starter or Charger, **Fig. 5**, Battery, **Fig. 6**, and Electrical Consumption, **Fig. 7**

The Rotating Disk, Fig. 1, is the primary source of heat from nuclear reactions to raise the temperature of the Fluid, **Fig. 8**, to produce Steam, **Fig. 3**, in order to spin the Fan Blades, **Fig. 2**, making the Disk System spin. The Disk must be a good heat sink in order to transfer the heat energy into its surrounding Fluid, **Fig. 8**.

The Fan Blades, Fig. 2, through Steam, **Fig. 3**, power the Disk System much like a Nuclear Fission Reactor.

The Steam, Fig. 3, causes the Fan Blades, **Fig. 2**, to Spin, connected to a Gear Box A for variable speeds as needed.

The Fluid, Fig. 4 & Fig. 8, is regular  $H_2O$  so that this Nuclear Fusion Reactor will be safe to Human Environments and without any radioactive fallout.

The Gear Box A & B, Fig. 9, provide a means of automatic control to accelerate and decelerate the Disk System between the Fan Blades, **Fig. 2**, and Starter and Charger, **Fig. 5**.

The Starter or Charger, Fig. 5, is an Electric Motor for starting the Fusion Reactor and a Charger once the Reactor is up and running.

The **Battery**, **Fig. 6**, is needed to start the Fusion Reactor and once started becomes a rechargeable storage for electricity.

The **Electrical Consumption**, **Fig. 7**, is a power line for commercial consumption.

The **Rotating Disk**, in the next page, **Page 4**, displayed as a **Cross Section of the Disk**, consist of the **Proton Pump**, **Fig. 10**, **Electrical Switch**, **Fig. 11**, **Proton Transfer**, **Fig. 12**, **Disk Laser**, **Fig. 13**, and **Helium Release**, **Fig. 14**.

The **Proton Pump**, **Fig. 10**, pushes protons into the top level of the Disk.

The **Electrical Switch**, **Fig. 11**, toggles between zero and a positive charge in order to transfer protons into the bottom level of the Disk.

The **Proton Transfer**, **Fig. 12**, are two holes between the top level and bottom level of the Disk to transfer protons by an electrical switch, **Fig. 11**.

The **Disk Lasers**, **Fig. 13**, are lasers attached at the ends of the Disk to provide equilibrium to two protons when under centrifugal forces by Disk rotation.

The **Helium Release**, **Fig. 14**, after the two protons fuse into Helium by the heat produced by the Disk Lasers, it pushes the Helium out since it has two positive charges and lighter than the two protons.

Please note that I have described only one Laser Model and that there are several Lasers attached at the ends of the Disk in circular formation. Also, not shown in the Diagrams, there is a simple Circular Electromagnetic Field Confinement so that the two protons do not touch the material Disk System at the bottom level in order not to melt the Disk.

Moreover, the Fusion Reactor can have multiple Disks, **Fig. 1, Page 3**, stacked flip-flopped on top of each other for more fusion power when appropriately needed. And, for uses in Space, one requires a counter rotation mechanism not mentioned in this Patent Application.

The practical Design of this Fusion engine is its simplicity, ease of use, and safety far better than Nuclear Fission Reactors, free from harmful radiation. And, since it is without complex plasma, the simplicity of this Reactor makes Maintenance far better than any Nuclear Fusion Reactor Design. It also has a direct rotating axel to the Fan Blades, **Fig. 2**, and Electric Motor, **Fig. 5**. Considering the military uses of this Reactor, it can never be used for weapons of mass destruction. Moreover, using high-pressure water and steam makes this Nuclear Fusion Reactor so **environmentally friendly** that I believe this design merits praise and reward to all people across the world.

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This **Work** is dedicated to my *Most Intelligent Brother, Manolito Catalasan*, who invited **Peter Paul Catalasan** to study Physics at the University of California at Riverside, upon which Peter Paul became the first to discover Unlimited Energy through Matter/Antimatter Production/Separation.

Having the knowledge of **Unlimited Energy**, we can apply such energies to overcome long distances through the use of Einstein's properties of Relativity upon which many equations have negative time dependency related to the speed of light. For example, if it takes one million light-years to get to another Galaxy, why not go back in time for one million light-years while traveling there, therefore arriving at **t=0**.

Given this opportunity, and a coordinated research effort between Valentino Catalasan, Victor Catalasan, and Peter Paul Catalasan, we can form an Advanced Research Laboratory, called the **Advanced Catalasan Research Laboratory, Inc**, or *ACRL*, which will spin off to a committed effort for any Noble Research Activity, where Manolito, as Chief Executive Officer, will own the Research Information. The responsibilities of research and development come from **Valentino Catalasan** – Chief Technology Officer, Peter Paul Catalasan – Research Director, and **Victor Catalasan** – Engineering Physicist. We all have *Technological First Loves*, Computer Science for Valentino, Physics for Peter Paul, Engineering for Victor, and the *Last Star Fighter Austin Catalasan*.

Current Research Proposals are as follows:

1. Interstellar Transport Vehicle Engine
2. Unlimited Energy or Electro-Nucleo Genesoids
3. Mathematical Creativity or Logic Formulators
4. The Helix Project
5. Miscellaneous Etc...